

WJHTC SECTION 32 31 13
INDUSTRIAL CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 This Section includes the following: This Section includes providing a 10 foot high PVC/polymer coated fence, frame work, and barbed wire; a 7 foot high galvanized fence, framework and barbed wire; one pedestrian gate; and four 10 foot high cantilever slide gates.

- a. PVC-coated, steel chain-link fabric.
- b. Galvanized steel chain-link fabric
- c. Polymer-coated steel framework.
- d. Galvanized-coated steel framework
- e. PVC-coated barbed wire.
- f. Galvanized-coated barbed wire.
- g. Cantilever slide gates.
- h. Pedestrian gate.

1.2.2 Related Sections include the following:

1. Section 02200 "EARTHWORK" for filling and for grading work.
2. Section 03300 "CAST-IN-PLACE CONCRETE" for concrete equipment bases/pads for gate operators, drives, and controls and post footings.

1.3 DEFINITIONS

CLFMI: Chain Link Fence Manufacturers Institute.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

1.4.1 Product Data: Material descriptions, construction details, dimensions of individual components and profiles, and finishes for the following:

- a. Fence and gate posts, rails, and fittings.
- b. Chain-link fabric, reinforcements, and attachments.
- c. Gates and hardware.
- d. Barbed wire.

1.4.2 Shop Drawings: Show locations of fence, each gate, posts, rails, and tension wires and details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, elevations, sections, gate swing and other required installation and operational clearances, and details of post anchorage and attachment and bracing. Provide installation instructions.

1. Tymetal Fortress Heavy Duty Cantilever Slide Gate: Obtain installation instructions.

1.4.3 Product Certificates: Signed by manufacturers of chain-link fences and gates certifying that products furnished comply with requirements.

1.4.4 Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

1.5.1 Installer Qualifications:

An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.5.3 Source Limitations for Chain-Link Fences and Gates:

Obtain each color, grade, finish, type, and variety of component for chain-link fences and gates from one source with resources to provide chain-link fences and gates of consistent quality in appearance and physical properties.

1.6 PROJECT CONDITIONS

1.6.1 Existing Utilities:

Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

- a. Notify COTR not less than two days in advance of proposed utility interruptions.
- b. Do not proceed with utility interruptions without Contracting Officers Technical Representatives (COTR) written permission.

1.6.2 Field Measurements:

Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

2.1.1 Steel Chain-Link Fence Fabric:

Height indicated on Drawings. Provide fabric fabricated in one-piece widths for fencing in height of 10 feet (3.05 m) or less. Comply with CLFMI's "Product Manual" and with requirements indicated below:

- a. Mesh and Wire Size: 2-inch (50-mm) mesh, 0.148-inch (3.76-mm) diameter.
- b. PVC-Coated Fabric for 10 foot high fence: ASTM F 668, Class 2b over metallic-coated steel wire.
 1. Metallic Coating: Zinc or Aluminum.
 2. Color: Black complying with ASTM F 934.
- c. Zinc-Coated Fabric for 7 foot high fence: ASTM A 392, with zinc coating applied to steel wire before weaving according to ASTM A 817, Type II, zinc coated (galvanized) with the following minimum coating weight
 1. Class 2: Not less than 2 oz./sq. ft. (610 g/sq. m) of uncoated wire surface.
- d. Coat selvage ends of fabric that is metallic coated during the weaving process with manufacturer's standard clear protective coating.
- e. Selvage: Selvages twisted at top and bottom.

2.2 INDUSTRIAL FENCE FRAMING

2.2.1 End, Gate, Corner, and Pull Posts:

- a. Round Steel Pipe: Standard weight, Schedule 40, galvanized steel pipe complying with ASTM F 1083 or Comply with ASTM F 1043, Material Design Group IA, external and internal coating Type A, consisting of not less than 1.8-oz./sq. ft. (0.55-kg/sq. m) zinc; and the following strength and stiffness requirements:
 1. End, Corner, and Pull Posts and Top Rail: Per requirements for Heavy Industrial Fence.

- b. Round Steel Pipe: Cold-formed, electric-resistance-welded steel pipe. Comply with ASTM F 1043, Material Design Group IC, with minimum yield strength of 50,000 psi (344 MPa); and the following external and internal coatings and strength and stiffness requirements:
 - 1. Coatings: Type A, zinc with organic overcoat, consisting of a minimum of 1.8 oz./sq. ft. (0.55 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
 - 2. End, Corner, and Pull Posts and Top Rail: Per requirements for Heavy Industrial Fence.

2.2.2 Line Posts:

- a. Roll-Formed Steel Shapes: C-sections or other shape, produced from structural steel. Comply with ASTM F 1043, Material Design Group II, with minimum yield strength of 45,000 psi (310 MPa); and the following coating and strength and stiffness requirements:
 - 1. Coating: Type A, consisting of not less than 2.0-oz./sq. ft. (1.22-kg/sq. m) average zinc coating per ASTM A 653/A 653M.
 - 2. Line: Per requirements for Heavy Industrial Fence.

2.2.3 Brace Rails:

Match top rail for coating and strength and stiffness requirements. Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and clamps for attaching rails to posts.

2.2.4 Top Rails:

Fabricate top rail from lengths 21 feet (6.4 m) or longer, with swaged-end or fabricated for expansion-type coupling, forming a continuous rail along top of chain-link fabricPost. Top rail shall match the requirements for End, Gate, Corner, and Pull Posts above.

2.2.5 Intermediate Rails:

Match top rail for coating and strength and stiffness requirements.

2.2.6 Bottom Rails:

Match top rail for coating and strength and stiffness requirements.

2.2.7 Extended Members:

Extend end, corner and pull posts above top of chain-link fabric a minimum of 12 inches (300 mm as required to attach barbed wire assemblies.

2.3 TENSION WIRE

2.3.1 General:

Provide horizontal tension wire at the following locations:

- a. Location: Extended along top and bottom of fence fabric.

2.3.2 Metallic-Coated Steel Wire:

~~0.177-inch-~~ (4.5-mm-) diameter, marcelled tension wire complying with ASTM A 824 and the following:

- a. Coating: Type I, aluminum coated (aluminized).
- b. Coating: Type II, zinc coated (galvanized) with the following minimum coating weight:
 1. Class 2: Not less than 1.2 oz./sq. ft. (366 g/sq. m) of uncoated wire surface.

2.4 INDUSTRIAL HORIZONTAL SLIDE GATES

2.4.1 General:

The Gate complies with ASTM F 1184 for the following slide-gate types:

- a. Single gate.
- b. Double gate.
- c. Classification: Type II Cantilever Slide, Class 2 with internal roller assemblies.
- d. Cantilever Slide Gate shall be a Fortress Heavy Duty Cantilever Slide Gate as manufactured by Tymetal Corporation or approved equal.

2.4.2 Frames and Bracing:

- a. The gate frame shall be fabricated from 6063-T5 aluminum alloy extrusions. The top member shall be a 3" x 5" aluminum structural channel/tube extrusion weighing not less than 3.9 lbs/lf. This is also referred to as a "5" extrusion" or "large primary". This member shall be "keyed" to interlock with the "keyed" track member. If fabricated as a single horizontal piece, the bottom member shall be a 2" x 5" aluminum structural tube weighing not less than 2.0 lbs/lf. If fabricated in two horizontal pieces, the bottom member shall be a 5" aluminum structural channel weighing not less than 2.65 lbs/lf. The two horizontal pieces or sections shall be spliced in the field. field.).
- b. The vertical members shall alternate between 2"x2" and 1"x2" in cross section weighing not less 1.1 lbs/lf and .82 lbs/lf respectively. The spacing for the vertical intermediates shall be no greater than half the height of the gate frame.
- c. The gate frame shall be fabricated in one or multiple sections depending on size requirements/constraints.

- d. The gate frame shall have a separate semi-enclosed "keyed" track, extruded from 6105-T6 aluminum alloy, weighing not less than 2.9 lbs/lf. Track member to be located on only one side of the top primary. When interlocked with the "keyed" top member and welded to it, it forms a composite structure with the top of the gate frame. Welds to be placed alternately along the top and side of the track at 9" centers and will be a minimum of 2" long.
- e. The gate frame is to be supported from the track by two pairs of swivel type, self-aligning, 4-wheeled, sealed lubricant, ball-bearing truck assemblies. The bottom of the support posts shall be equipped with two pairs of 3" rubber guide wheels.
- f. Diagonal "X" bracing of 3/16" minimum diameter stainless steel aircraft cable shall be installed to brace the gate.
- g. Frame Corner Construction shall be welded.

2.4.3 Fabric on Gate:

The fabric on the gate shall conform to paragraph "2.1 Chain Link Fence Fabric" requirements above. It shall extend the entire length of the gate which (including the opening and counterbalance) and shall be secured at the ends by standard fence industry tension bars and tied with standard fence industry ties at each vertical member.

2.4.4 Gate Posts:

Shall conform to the paragraph "2.2 Industrial Fence Framing" requirements above

2.4.5 Extended Gate Posts and Frame Members:

Extend gate posts and frame end members above top of chain-link fabric at both ends of gate frame a minimum of 12 inches (300 mm as required to attach barbed wire assemblies.

2.4.6 Hardware:

Latches permitting operation from both sides of gate, and stops fabricated from galvanized steel with stainless-steel fasteners. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

2.5 FITTINGS

2.5.1 General:

Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.

2.5.2 Post and Line Caps:

Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide weathertight closure cap for each post.

- a. Provide line post caps with loop to receive tension wire or top rail.

2.5.3 Rail and Brace Ends:

Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.

2.5.4 Rail Fittings:

Provide the following:

- a. Top Rail Sleeves: Hot-dip galvanized pressed steel or round steel tubing. Not less than 6 inches (153 mm) long.
- b. Rail Clamps: Hot-dip galvanized pressed steel. Provide line and corner boulevard clamps for connecting intermediate rails in the fence line to line posts.

2.5.5 Tension and Brace Bands:

Hot-dip galvanized pressed steel.

2.5.6 Tension Bars:

Hot-dip galvanized steel, length not less than 2 inches (50 mm) shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

2.5.7 Truss Rod Assemblies:

Hot-dip galvanized steel rod and turnbuckle or other means of adjustment.

2.5.8 Barbed Wire Arms:

Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide the following type, according to ASTM F 626, with clips, slots, or other means for attaching strands of barbed wire, integral with post cap; one for each post, unless otherwise indicated. Provide corner arms at fence corner posts, unless extended posts are indicated.

- a. Type I, single slanted arm.

2.5.9 High Security Wires Ties:

In accordance to ASTM F 626:

- a. Power Fastened Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 1. Shall be 0.148-inch- diameter wire steel wire with a minimum tensile strength of 65 to 75 ksi, and 1.8 oz/ft² of zinc in accordance with ASTM A 641 Class B coating or 0.40 oz/ft² of aluminum in accordance with ASTM A 809.

2. Aluminum: ~~ASTM B 211~~ (ASTM B 211M); alloy 1350-H19; ~~0.148-inch-~~ (3.76-mm-) diameter, mill-finished wire.

2.5.10 Pipe Sleeves:

For posts set into concrete, provide preset hot-dip galvanized steel pipe sleeves complying with ASTM A 53, not less than ~~6 inches~~ (150 mm) long with inside dimensions not less than ~~1/2 inch~~ (13 mm) more than outside dimension of post, and flat steel plate forming bottom closure.

2.6 BARBED WIRE

2.6.1 Zinc-Coated Steel Barbed Wire:

Comply with ASTM A 121, Chain-Link Fence grade for the following two-strand barbed wire:

- a. Standard Size and Construction: ~~0.099-inch-~~ (2.51-mm-) diameter line wire with ~~0.080-inch-~~ (2.03-mm-) diameter, 4-point round barbs spaced not more than ~~4 inches~~ (102 mm) o.c.

2.6.2 Aluminum-Coated Steel Barbed Wire:

Comply with ASTM A 585, Type I, for 2-strand, ~~0.099-inch-~~ (2.51-mm-) diameter line wire with ~~0.080-inch-~~ (2.03-mm-) diameter, 4-point barbs spaced not more than ~~5 inches~~ (127 mm) o.c.

2.7 CAST-IN-PLACE CONCRETE

2.7.1 General: Comply with ACI 301 for cast-in-place concrete.

2.7.2 Materials: Portland cement complying with ASTM C 150 Type I, aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94.

- b. Concrete Mixes: Normal-weight concrete 6% air entrained with not less than ~~3000-psi~~ (20.7- MPa) compressive strength (28 days), ~~5-inch~~ (75-mm) slump, and ~~1-inch~~ (25-mm) maximum size aggregate.

2.8 GROUT AND ANCHORING CEMENT

2.8.1 Nonshrink, Nonmetallic Grout:

Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

2.8.2 Erosion-Resistant Anchoring Cement:

Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior applications.

2.9 FENCE GROUNDING

2.9.1 Conductors:

Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.

- c. Material Above Finished Grade Copper or Aluminum.
- d. Material On or Below Finished Grade: Copper.
- e. Bonding Jumpers: Braided copper tape, 1 inch (25 mm) wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.

2.9.2 Connectors and Ground Rods:

Listed in UL 467.

- a. Connectors for Below-Grade Use: Exothermic welded type.
- b. Ground Rods: Copper-clad steel.

- 1. Size: 5/8 inch by 96 inches (16 by 2400 mm).

2.10 POLYMER FINISHES

2.10.1 Supplemental Color Coating:

In addition to specified metallic coatings for steel, provide fence components with polymer coating.

2.10.2 Metallic-Coated Steel Tension Wire:

PVC-coated wire complying with ASTM F 1664, Class 2a or 2b.

2.10.3 Metallic-Coated Steel Framing:

Comply with ASTM F 1043 for polymer coating applied to exterior surfaces and, except for tubular shapes, to exposed interior surfaces.

- c. Polymer Coating: Not less than 3-mil- (0.076-mm-) thick polyester finish

2.10.4 Fittings:

Post and Line Caps, Rail and Brace Ends, Top Rail Sleeves, Tension and Brace Bands, Tension Bars, Truss Rod Assemblies, Barbed Wire Arms, and Tie Wires, Clips, and Fasteners: Comply with ASTM F 626 for polymer coating applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces.

- d. Polymer Coating: Not less than 10-mil- (0.254-mm-) thick PVC.

2.10.5 Metallic-Coated Steel Barbed Wire:

PVC-coated wire complying with ASTM F 1665, Class 2a or 2b.

2.10.6 Color:

Black

PART 3 - EXECUTION

3.1 EXAMINATION

- 3.1.1 Examine areas and conditions, with Installer present, for compliance with requirements for property line, existing fence location, site clearing, earthwork, pavement work, and other conditions affecting performance.

- a. Do not begin installation before final grading is completed, unless otherwise permitted by Architect.

- 3.1.2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

3.2.1 Layout:

Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet (152.5 m) or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

3.3.1 General:

Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.

- a. For replacement of existing fence that is along the property line, the new fence shall be installed one (1) foot inside the existing fence.

3.3.2 Post Excavation:

Drill or hand-excavate holes for posts to diameters and spacings as indicated, in firm, undisturbed or compacted soil.

3.3.3 Post Setting:.

- a. Terminal, Corner, Pull, Gate and Brace Posts: Hand-excavate holes for post foundations in firm, undisturbed or compacted soil. Set terminal, corner, pull, gate and brace posts in concrete footing. Protect portion of posts aboveground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Using mechanical devices to set line posts per ASTM F 567 is permitted. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured. The bituminous pavement shall be saw cut in straight lines of cored full depth of the pavement.
- b. Line Posts: Line posts shall be mechanically driven into firm, undisturbed or compacted soil per ASTM F 567. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured. The bituminous pavement shall be saw cut in straight lines of cored full depth of the pavement.
- c. Dimensions and Profile: As indicated on Drawings.
- d. Exposed Concrete Footings: Extend concrete 1 inches (25 mm) above grade, smooth, and shape to shed water.
- e. Gate Posts and Line Posts over infiltrators. The top of the infiltrators are a minimum of 18" below grade and deeper. The bituminous concrete pavement shall be saw cut full depth in straight lines. Care shall be taken during excavation so not to disturb or contaminate the infiltrator with soil. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured.

3.4 CHAIN-LINK FENCE INSTALLATION

3.4.1 Terminal Posts:

Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more and every 500 feet in a straight run.

3.4.2 Line Posts:

Space line posts uniformly at 10 feet (3.05 m) o.c.

3.4.3 Post Bracing Assemblies:

Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at midheight of fabric on fences with top rail and at two-thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

3.4.4 Tension Wire:

Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with ~~0.120-inch-~~ (3.05-mm-) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (609 mm) o.c. Install tension wire in locations indicated before stretching fabric.

- a. Top Tension Wire: Install tension wire within 6 inches (150 mm) of top of fabric and tie to each post with not less than same gage and type of wire.
- b. Bottom Tension Wire: Install tension wire within 6 inches (150 mm) of bottom of fabric and tie to each post with not less than same gage and type of wire.

3.4.5 Intermediate Rails:

Install in one piece as indicated on Drawings, spanning between posts, using fittings, special offset fittings, and accessories.

3.4.6 Chain-Link Fabric:

Apply fabric to outside of enclosing framework. Leave [1 inch (25.4 mm)] between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

3.4.7 Tension or Stretcher Bars:

Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches (380 mm) o.c.

3.4.8 Tie Wires:

Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

- a. Maximum Spacing: Tie fabric to line posts 12 inches (304 mm) o.c. and to braces 24 inches (609 mm) o.c.

3.4.9 Fasteners:

Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.4.10 Barbed Wire:

Install barbed wire uniformly spaced as indicated on Drawings. Pull wire taut and install securely to extension arms and secure to end post or terminal arms.

3.5 GATE INSTALLATION

3.5.1 General:

Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 GROUNDING AND BONDING

3.6.1 Fence Grounding:

Install at maximum intervals of 500 feet (150 m)] except as follows:

- a. Gates and Other Fence Openings: Ground fence on each side of opening.
 1. Bond metal gates to gate posts.
 2. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches (460 mm) below finished grade

3.6.2 Protection at Crossings of Overhead Electrical Power Lines:

Ground fence at location of crossing and at a maximum distance of 150 feet (45 m) on each side of crossing.

3.6.3 Fences Enclosing Electrical Power Distribution Equipment:

Ground as required by IEEE C2, unless otherwise indicated.

3.6.4 Grounding Method:

At each grounding location, drive a ground rod vertically until the top is 6 inches (150 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location, including the following:

- a. Each Barbed Wire Strand. Make grounding connections to barbed wire with wire-to-wire connectors designed for this purpose.
- b. Each Barbed Tape Coil: Make grounding connections to barbed tape with connectors designed for this purpose.

3.6.5 Bonding Method for Gates:

Connect bonding jumper between gate post and gate frame.

3.6.6 Connections:

Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

- a. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
- b. Make connections with clean, bare metal at points of contact.
- c. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
- d. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
- e. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

3.6.7 Bonding to Lightning Protection System:

If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor complying with NFPA 780.

3.7 ADJUSTING

3.7.1 Gate:

Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

3.7.2 Lubricate:

Lubricate hardware, gate operator, and other moving parts.

3.8 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From Indicated Position: 1 inch.
- C. Minimum distance from property line: 24 inches.

End of Section